CETME

SPORT RIFLE MODEL S

MADE IN SPAIN

I M P O R T A N T

DO NOT use the rifle until you are thoroughly familiar with the Instruction Manual and Operation of this Rifle. NOTE ESPECIALLY:

When you wish to fire, the Bolt Carrier MUST be ALL THE WAY Forward, so that no part of the Bolt is visible thru the Ejection Port, or the Rifle Will NOT FIRE; as the mechanism is built to prevent firing unless the Bolt is properly locked and the Carrier is ALL THE WAY FORWARD.

In this Rifle, as in all others having a powerful Bolt return spring, You MUST BE CAREFUL NOT TO LOAD A SECOND CARTRIDGE INTO THE BACK OF AN UNFIRED CARTRIDGE ALREADY IN THE CHAMBER, as doing so may cause Firing of the First Cartridge, WITH VERY DANGEROUS RESULTS to the Firer and the Rifle. Therefore, NEVER CLOSE THE RIFLE WITH A LOADED MAGAZINE IN THE RIFLE WHEN THERE IS ANY POSSIBILITY THAT THERE MIGHT BE A LOADED CARTRIDGE IN THE CHAMBER, either because you have loaded a single round previously, or because of an apparent misfire or any other circumstance. IN EVERY CASE WHEN A CARTRIDGE IS CHAMBERED OUT OF THE MAGAZINE BY RELEASING THE BOLT, THE CHAMBER MUST START EMPTY FOR PROPER FUNCTIONING!

DESCRIPTION AND FUNCTIONING
of the
" CETME - SPORT Rifle "

Manufactured by. - "CENTRO DE ESTUDIOS TECNICOS DE MATERIALES ESPECIALES" Spain.

This organization, a branch of the "National Institute of Industry" Madrid, Spain, is devoted to research and development in matters related to National Defense.

One of its greatest successes concerning weapons, was the development of the "CETME" assault rifle which, in concurrence with other european weapons has been adopted by West Germany and is now in production in that country, under CETME license, with the denomination "G3".It has also been adopted by other european Armies.

A new sporting model of Rifle, based upon the experience gained in building the CETME assault rifle, is the "CETME-SPORT" designed taking advantage of the latest developments in manufacturing processes. Its distribution in the U. S. A. has been granted to "MARS EQUIPMENT CORP.", Chicago, Ill.

Both the "CENTRO DE ESTUDIOS TECNICOS DE MATERIALES ESPECIALES" and "MARS EQUIPMENT CORP." wish you the greatest success with your "CETME-SPORT". To promote that success is the object of the present brochure.

CONTENTS

I. General-Specifications.

II. Main groups.

III. Accessories.

IV. Description.

V. Handling.

VI. Operation.

VII. Disassembly procedure for cleaning.

VIII. Assembly procedure.

IX. Ammunition specifications.

I.—GENERAL-SPECIFICATIONS

Caliber: 7.62 mm NATO and all .308 Cartridges conforming to Military-specifications for dimensions and operating pressures.

Weight: Approximately 9 lbs. unloaded.

Length: 40 inches overall.

Type of Operation: Autoloading, Semiautomatic Only. Bolt locked by positive inertial System, assisted by Case Adhesion with unlocking gas assisted.

Magazine Capacity: 5 or 20 Round Magazines.

Features: Integral Telescope Mount bases and Fabric Sling, as well as Field Cleaning Kit are provided. Rifle is entirely built of Steel Forgings, Turnings and Stampings, carefully selected and heat treated in every functioning part. Butt Stock is wood, and a choice of wood forend or metal forend with a Target Bipod is offered. All Rifles are equipped with a recoil reducing Brake at the muzzle of the Barrel.

Fig. 1.—The normal CETME Model S rifle.

Fig. 2.—The CETME Model S rifle with a metal handguard and a bipod support.

Fig. 3.—The CETME Model S rifle fitted with a telescopic sight

II.—MAIN GROUPS

1. Barrel, receiver, cocking and aiming devices, and handguard (optionally, a bipod support).
2. Bolt.
3. Trigger Housing Group (with the firing mechanism contained inside).
4. Buttstock with main operating spring and buffer.
5. Magazine.

III.—ACCESSORIES

1. Sling.
2. Case with cleaning tools.
3. Muzzle cover and rifle scabbard.
4. Telescopic sight mount.
5. Magazine loading device.

IV.—DESCRIPTION

1. **Barrel, receiver, cocking and aiming devices, and handguard (optionally, a bipod support)** (figure 4).

The rear end of the **barrel** is fastened to the barrel extension. The recoil brake is screwed on the muzzle end.

The **receiver** is manufactured from sheet steel by drawing. Its front end is welded to the barrel extension and joined to the cocking lever guide tube. Its rear end is fastened to the buttstock by means of two pins. The magazine housing is located in the receiver lower part, to which the trigger housing group is fastened by a pin.

The **cocking device** is situated on top of the barrel. The cocking lever is set at a folded position; it is used for cocking and feeding the weapon and it also allows the bolt to be fixed at its rear position by means of a notch in the guide tube.

The **aiming device** is composed of the front sight and a turning leaf rear sight. The first leaf has a «U» notch for fast aiming at a distance up to 100 m. The other three leaves are of the peep type, and set for firing to 200 m, 300 m and 400m.

The **wooden handguard** is fitted with metal reinforcements at its two ends in order to fasten it to the weapon. The rear end is housed in a circular slot in the barrel extension; the front end is fastened to the barrel by means of a flange and a screw.

The **metal handguard**, which is only used when the weapon is provided with a bipod (figure 2), is fastened, at its rear end, in the same way as the wooden handguard; at its front end, it is secured to the barrel through a riveted clip.

The **bipod** is fastened to the barrel by means of a flange. The two legs have a device allowing their fast opening and folding. When in the folded position, the bipod legs reinforce the metal handguard attachment to the barrel.

Fig. 4

2. **Bolt** (figure 5).

The **bolt** is housed within the receiver, along which it moves to perform its locking and unlocking movements during operation. The bolt functions are feeding, locking and the extraction of the cartridge case after firing.

The bolt is composed of the following parts:

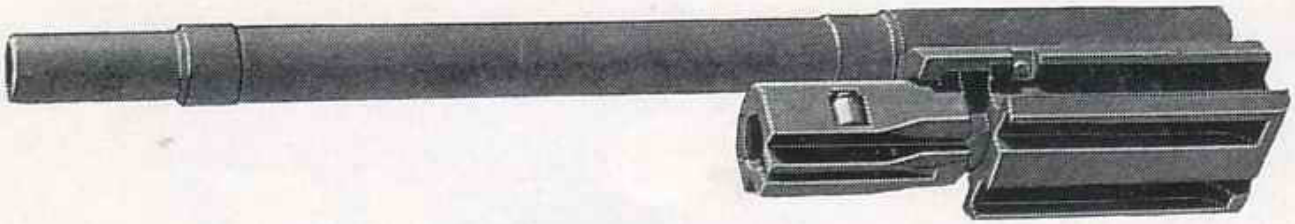
— Bolt carrier, with main operating spring guide tube and bolt head locking lever.

— Bolt head, with locking rollers, extractor, and extractor spring.

— Locking piece.

— Firing pin spring.

— Firing pin.



Bolt

Bolt carrier with main operating spring guide tube

Bolt head

Locking piece

Firing pin spring

Firing pin

Fig. 5

3. **Trigger Housing Group with firing mechanism** (figure 6).

The **Trigger Housing Group** is attached, at its fore part, to the receiver by a pin (a). The handgrip may pivot somewhat around this pin. At its rear part it is fixed between the receiver and the coupling box of the buttstock.

The firing mechanism is situated within the handgrip upper part, and it is composed of the following main parts:

— Trigger.

— Trigger bar with the interrupting catch.

— Hammer.

— Ejector.

All these pieces, with their corresponding pins and springs, are mounted in the action frame (b).

The handgrip (housing) and the action frame are joined through the pivot of the safety lever (c).

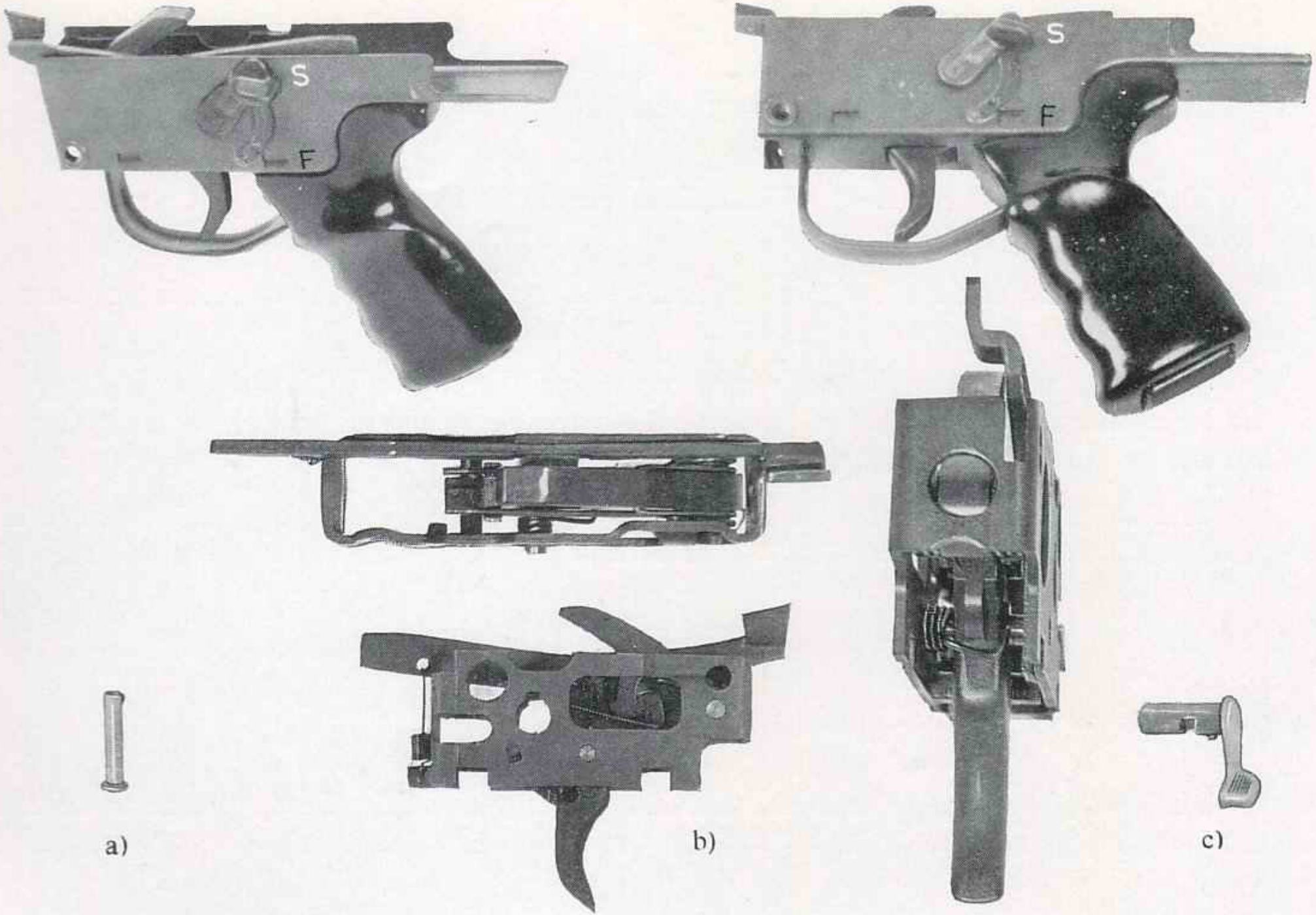


Fig. 6

4. **Buttstock with main operating spring and buffer** (figure 7).

The **buttstock** is made of walnut. It has a hardened rubber butt plate, with a metal reinforcement.

The coupling box is situated at the buttstock fore end. The buttstock is fastened to the receiver through the coupling box and two pins.

The interior guide rod of the main operating spring is riveted to the coupling box. The main operating spring end is supported by a cap, which is retained at the guide rod fore end by means of a stop.

The buttstock is joined to the coupling box through the buffer support, which is fastened to the buttstock with a screw. The buffer is composed of three hardened rubber blocks.

5. **Magazine** (figure 3).

The **magazine** is manufactured from sheet steel by drawing. Two types are made: the normal type with a capacity of 5 cartridges and the special type with a capacity of 20 cartridges.

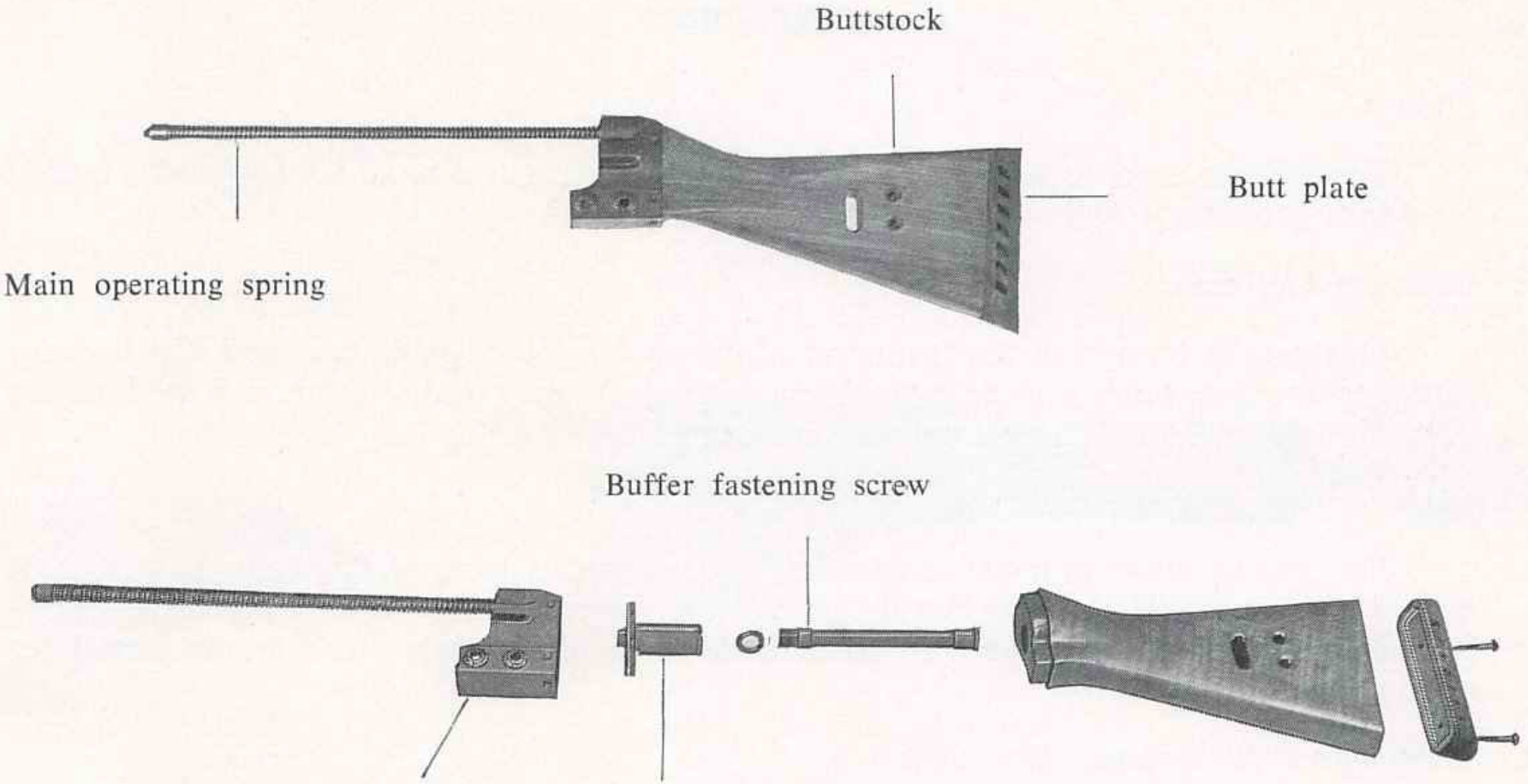

Buttstock
Butt plate
Main operating spring
Buffer fastening screw
Coupling box
Buffer support

Fig. 7

ACCESSORIES

1. Sling.

The sling is made of canvas. At one of its ends it has a retaining clip and a buckle to adjust the sling length.

2. Cleaning tool case.

This case is housed in the front end of the cocking lever guide tube and it is fastened to the cover. It contains a cleaning brush, a folding cleaning rod, (which is joined to the cover through a hemp string) and four oil capsules.

3. Muzzle cover and rifle scabbard (figure 8).

The muzzle cover is made of plastic. It prevents dirt from getting into the barrel. It must be removed before firing but if this detail is forgotten there is no danger. The scabbard is used to keep the weapon in good operation condition when it must be stored for a long time.

4. Telescopic sight mounts (figure 3).

The mounts are two identical assemblies, to which can be adapted most of the American one inch telescopes by snapping the steel bounds over the telescope body, and screwing the bands to their corresponding upper mounts. The Mounts may then be assembled to the bases welded onto the Rifle, and the band screws may be loosened for boresighting.

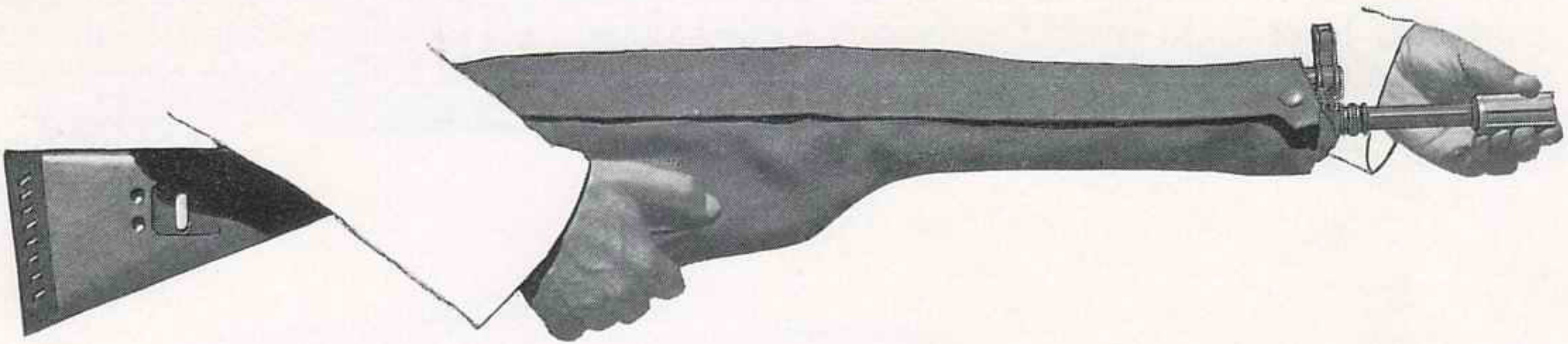


Fig. 8

5. **Magazine loading device** (figure 9).

It is composed of a steel box (1) with a cover (2). The box is opened at its two ends. The magazine is coupled to one of the ends. A charger also made of sheet steel slides into the box. In order to easily and quickly load the magazine, lay the cartridges in the way shown in (a), close the box, take hold of the cover with a hand and push the charger with the other hand, as it may be seen in b.

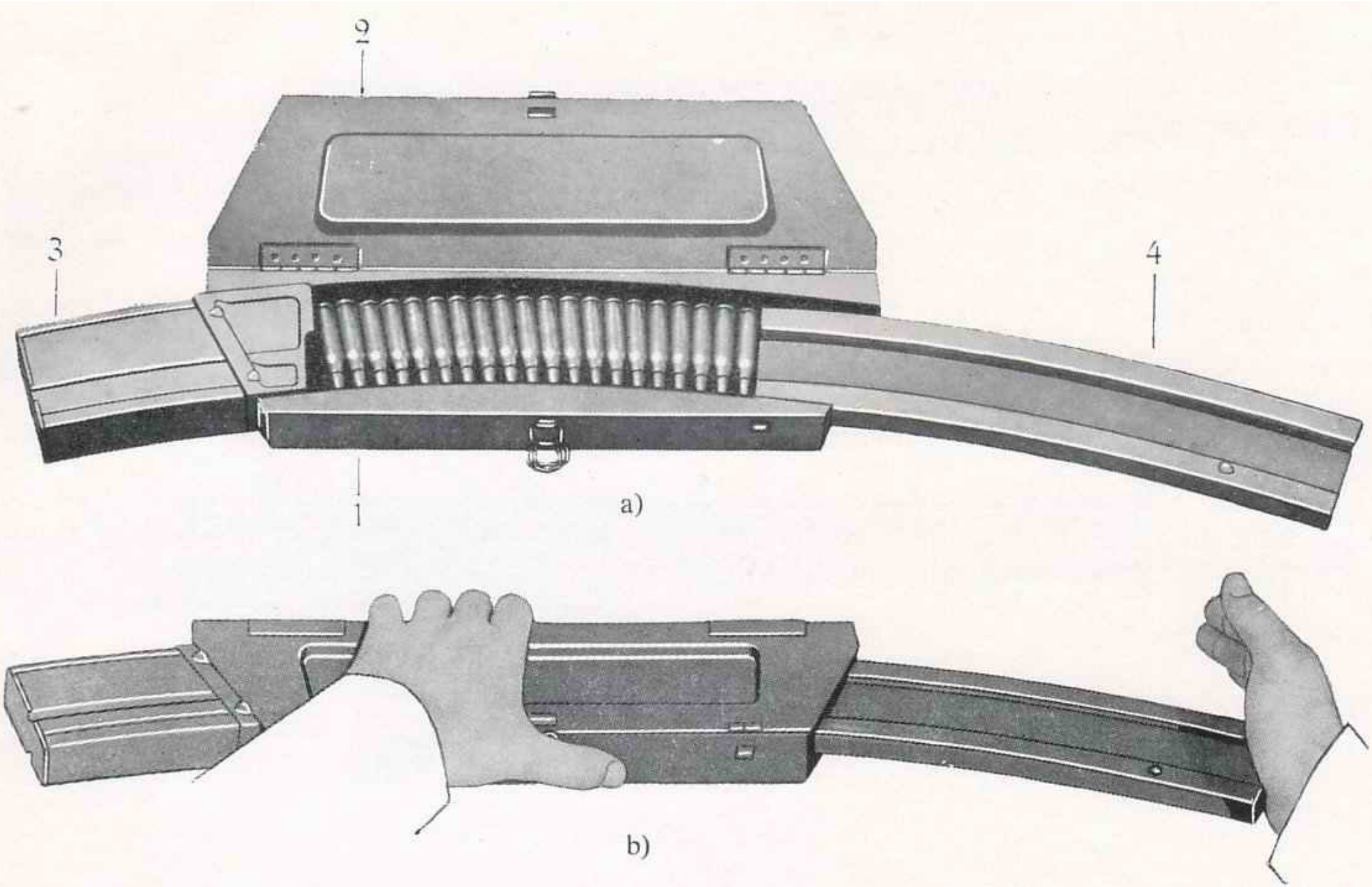


Fig. 9

V.—HANDLING

1. Magazine insertion and removing (figure 10).

The magazine is inserted in the lower side of the weapon without the help of any mechanism (figure 10, a). The magazine is removed by taking it with a hand and pressing the pushbutton (1), figure 10, b).

a)

b)

Fig. 10

2. Cocking (figure 11).

Upon insertion of a loaded magazine in its housing, set the fire-selector lever at «F» position (firing), draw the cocking handle to the rear and release it. The bolt moves forward and the weapon is loaded and cocked, ready to fire. Put the gun on «S»: (safe) if immediate firing is not required-SAFETY FIRST!

Fig. 11

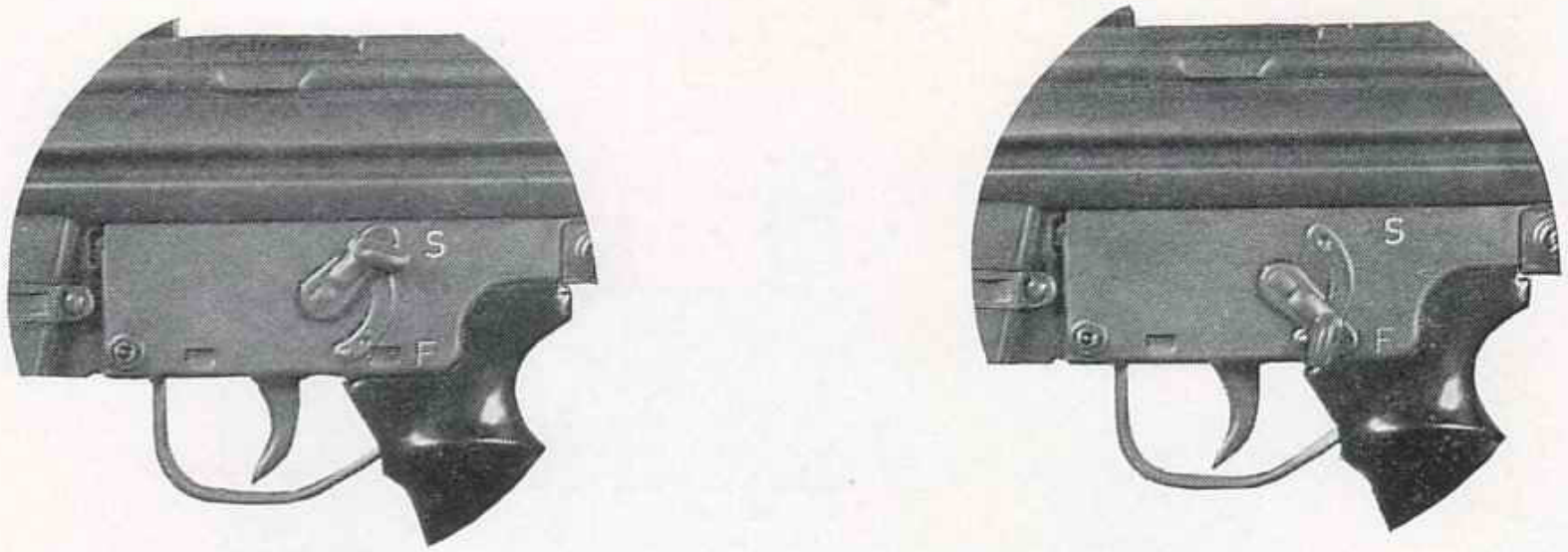
3. Safety arrangements (figure 12).

Upon cocking and loading the weapon, if you want to engage the safety, it is necessary to set the safety lever at the «S» position.

It you want to keep the safety engaged with the bolt in the open position, it is necesary to set the fire-selector lever at «F» position, draw the cocking handle to the rear and turn it to the right to get it retained in its notch in the guide tube. Then, the safety lever must be set at «S» position.

4. Firing.

Set the safety lever at «F» position. Every time the trigger is pulled a shot is fired. In order ti fire the next shot, it is necessary to release the trigger and to pull it again.



Safety

Fire

Fig. 12

5. Use of the cleaning tools (figure 13) (a, b,c).

a) *Taking out the cleaning tool case.*

With the help of the tip of a cartridge, push in the lug appearing through the cylindrical hole at the front sight base (1) and, at the same time, slightly turn the cap (2) until the lug is retained; then, also by means of a cartridge, push the second lug, which is

housed in the opposite hole, and keep turning the cap until this second lug is retained. Now, the cleaning tool case is taken out by pulling the cap.

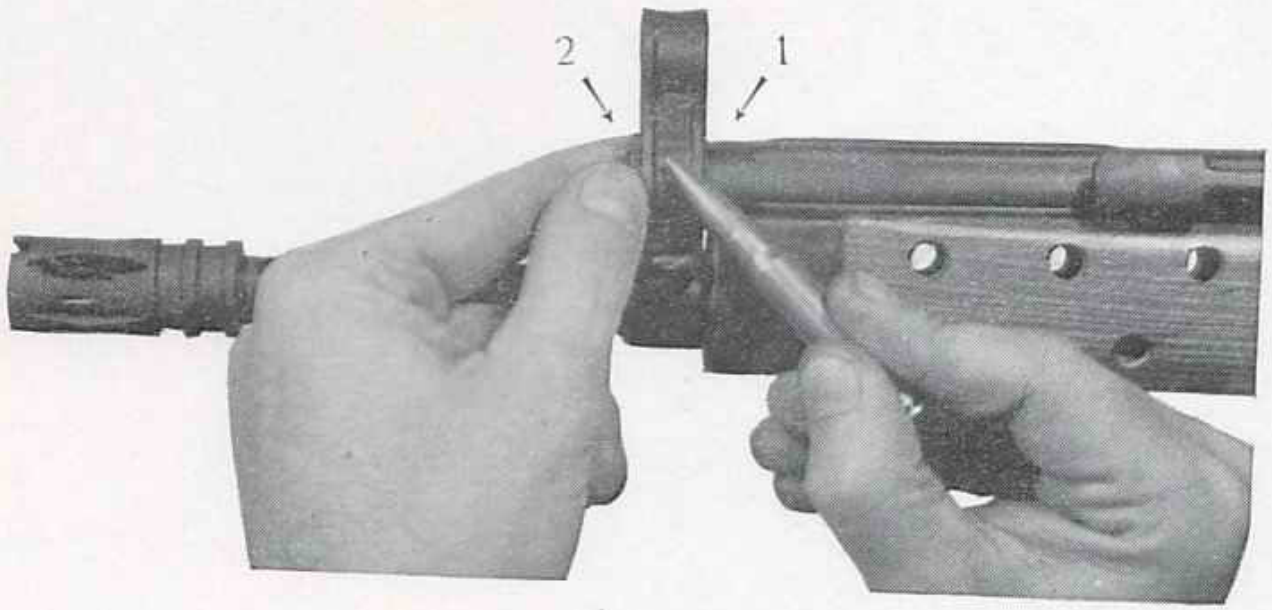


Fig. 13 a).

b) *Chamber cleaning.*

Draw the cocking lever to the rear and set it at its retained position. Screw the cleannig brush on the folding cleaning rod and introduce it through the ejection port. Carefully brush the chamber as indicated in figure 13, b.

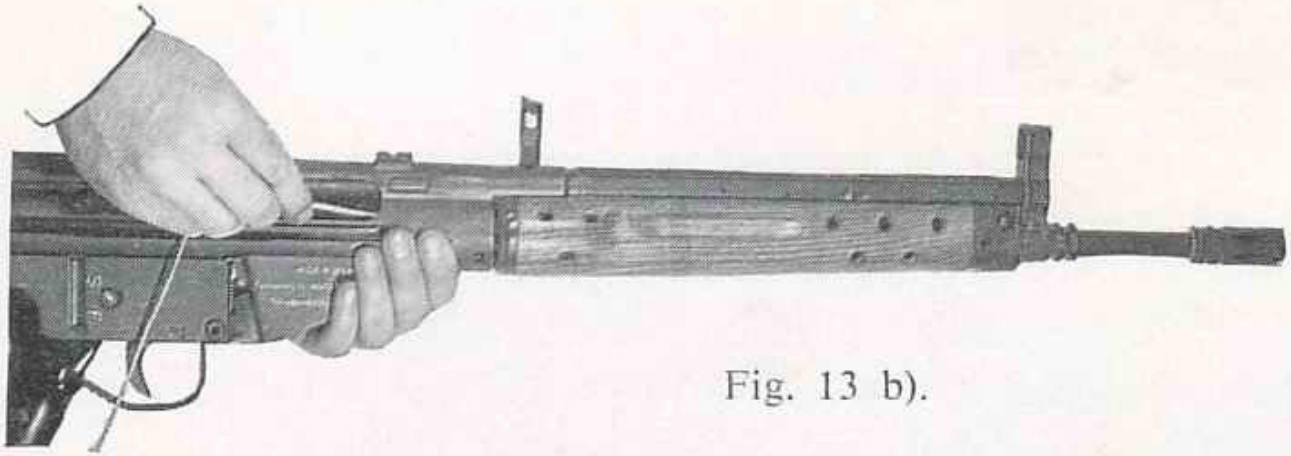


Fig. 13 b).

Fig. 13 c).

c) *Bore cleaning (Field Use)*

With the bolt open, and the weapon held vertical, introduce the folding rod through the muzzle and let it fall until it appears at the ejection port. Screw the brush to the rod (fig. 13 c) and pull the hemp string to carry the brush along the bore till it is pulled out of the muzzle. Repeat this operation two or three times. At the last time, slightly impregnate the cleaning brush with oil contained in one of the capsules. This oil will be used also to oil the bolt through theroller housings.

d) *Replacing cleaning tool case in its housing:*

Press both lugs and push the cap in until it is stopped by the front sight base, and turn the cap until the lugs are housed in their corresponding slots.

VI.—OPERATION

1. **Bolt operation** (figure 14).

In the locked position, the arrangement of the different parts is such as shown in figure 14). The rollers, forced by the sloping surfaces of the locking piece, protrude through openings of the bolt head and are pressed into recesses of the barrel extension.

When firing takes place the gas pressure acts against the base of the cartridge and this base presses against the front face of the bolt head. This force is transmitted to the rollers which press against the sloping surfaces of the locking piece and accelerate it backwards. The locking piece, in its turn, moves the bolt carrier backwards. Consequently, the rollers are completely withdrawn into the openings in the bolt head and the system takes the arrangement shown in figure 14 b) where a separation between the bolt carrier and the bolt head can be seen. From this moment the whole system moves backward freely by the impulse transmitted to the bolt carrier overcoming the main operating spring resistance. Finally the energy stored by this spring drives the bolt forward, and returns it to the position shown in figure 14 a).

As it may be deduced from this explanation, the weapon remains locked until the bolt carrier has moved backwards a certain amount. The time required for this displacement is much greater than the time necessary for the bullet to leave the barrel.

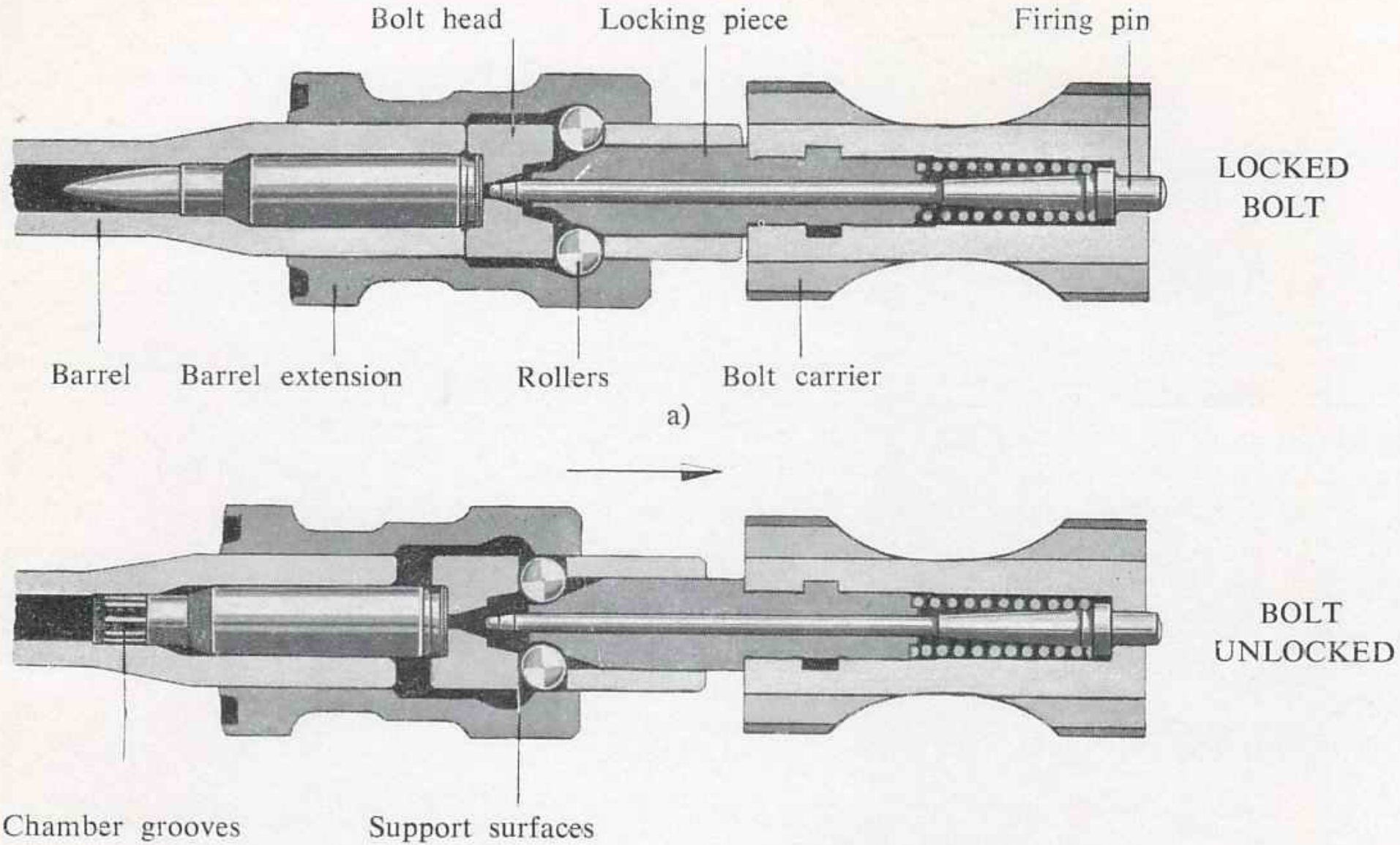

Bolt head
Locking piece
Firing pin
LOCKED BOLT
Barrel
Barrel extension
Rollers
Bolt carrier
a)
BOLT UNLOCKED
Chamber grooves
Support surfaces
b)

Fig. 14

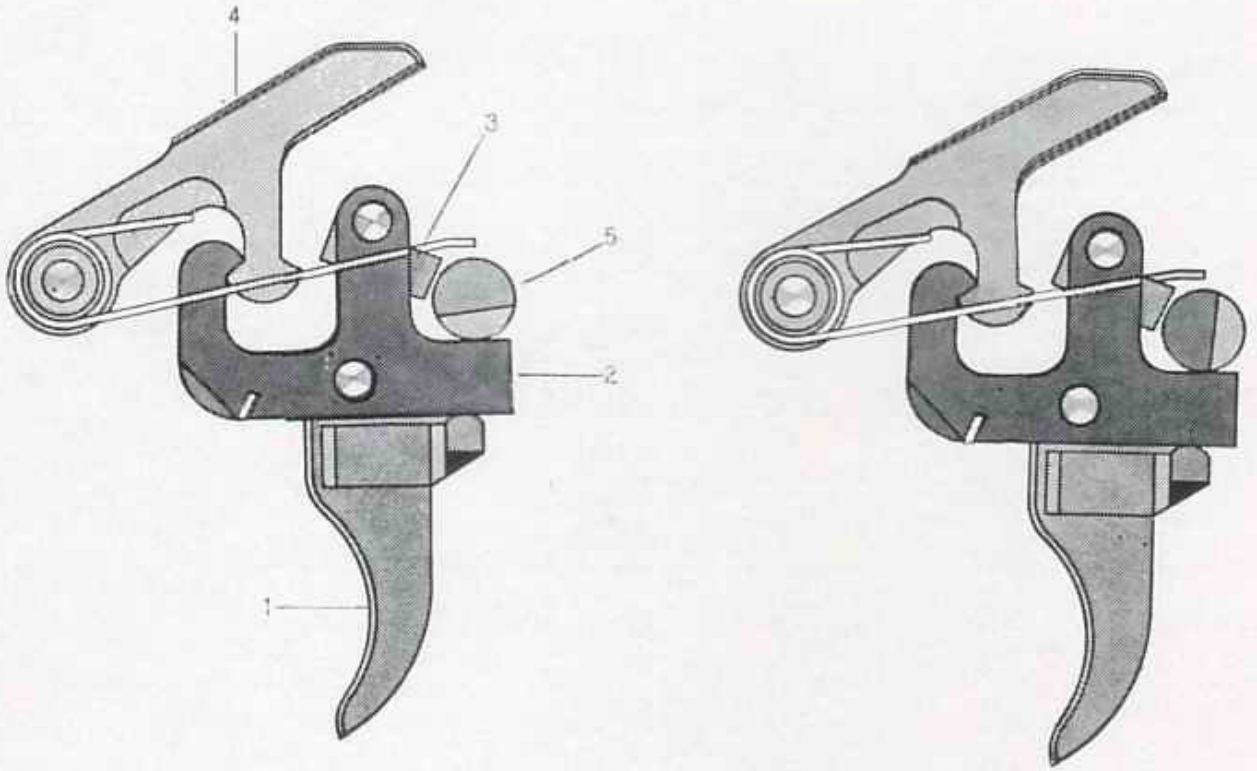
2. **Firing mechanism operation** (figure 15).

a) *Fire* (*semi-automatic*).

When the safety lever is set at «F», on pulling the trigger (1), the trigger bar (2) releases the hammer (4), which is driven by its spring, strikes the firing pin and the cartridge is fired. The rearward travel of the bolt cocks the hammer (4) which is now retained by the front end of the interruptingcatch (3). On releasing the trigger (1) the hammer (4) is no longer retained by the interrupting catch but it is retained by the trigger bar (2). If the trigger is pulled before the bolt is locked, the hammer will either strike the bolt carrier rather than the firing pin, or the firing pin will not be sufficiently long to reach the front of the bolt in its unlocked position. In either event, the gun can not fire, unless the firing pin guide (lock piece) has the rollers pushed out into the locked position.

b) *Safety.*

When the safety lever is set at «S» the trigger bar (2) is blocked by the pivot of the safety lever (5). The trigger bar cannot pivot and the hammer cannot be released.



a) b)

Fig. 15

VII.—WEAPON DISASSEMBLY PROCEDURE FOR CLEANING PURPOSES

a) Remove the magazine if it is inserted in the weapon.

b) Make sure that there is no cartridge in the chamber. To do this, draw the cocking handle to the rear and, after having seen that the chamber is empty, release the cocking handle to allow the bolt to move forwards.

c) Take out the two attaching pins from the buttstock and put them into the two holes drilled in the buttstock for this purpose.

d) Take off the buttstock with main operating spring (figure 16 a).

e) Remove front pin and detach trigger housing group.

f) With the help of the cocking handle, draw the bolt to the rear and take it out through the rear of the receiver (figure 16 b).

a)

b)

Fig 16

g) *Bolt disassembly*:

— Press the bolt head until it is stopped by the bolt carrier; turn the bolt head 180° counterclockwise and pull it out (figure 17 a).

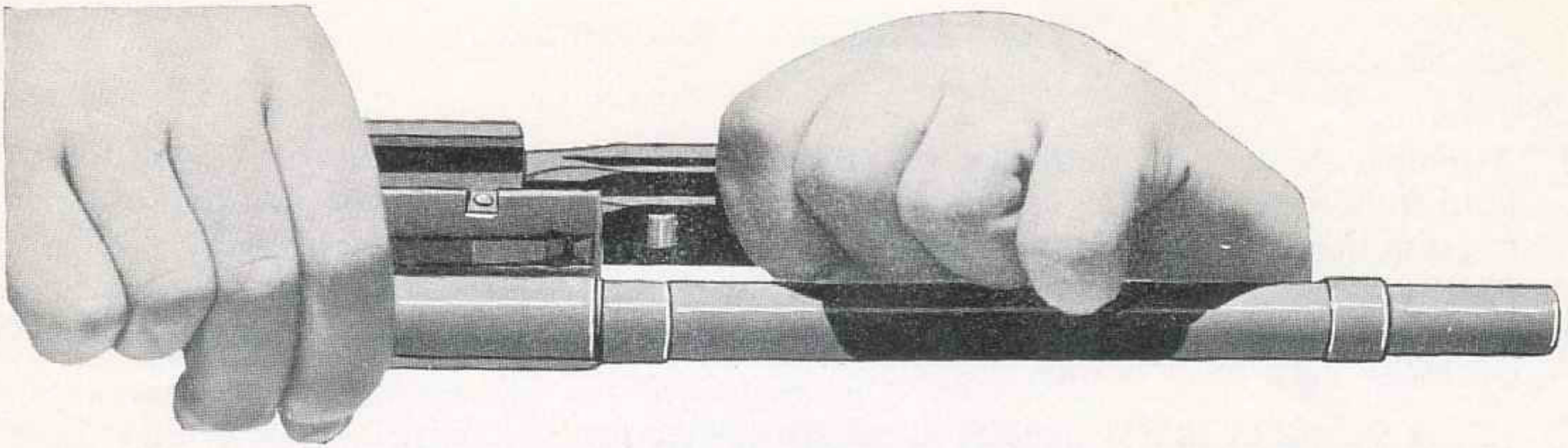
— Turn 90° the locking piece and take it out (figure 17 b).

— Pullout the firing pin and its spring.

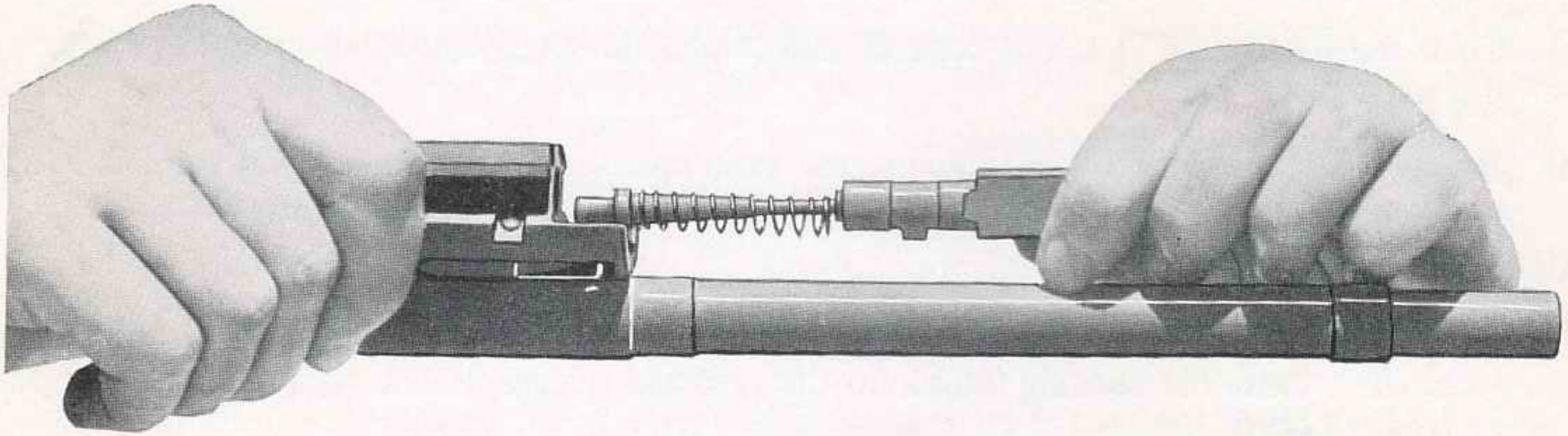
h) *Firing mechanism cleaning*:

— The normal cleaning of this mechanism does not require its disassembly. Such disassembly, whenever necessary, should be performed by an expert gunsmith.

— When the firing mechanism is very dirty it may be cleaned with solvent. The whole trigger housing group may be rinsed or dipped without further stripping, and the excess solvent witped off with a rag. Let dry and oil slightly.



a)



b)

Fig. 17

VIII.—ASSEMBLY PROCEDURE

a) Assemble the bolt by reversing the procedure followed in disassembly. Separate the bolt head from the bolt carrier so that the rollers may withdraw; to do this, the best method is to grasp the Bolt Carrier so that the front of the Bolt faces upward, then insert a screwdriver blade or knife blade into the Ejector Slot, turn the Bolt Head a quarter turn counter-clockwise; pull the Bolt Head fully forward; then turn the Bolt Head a quarter turn back clockwise back to its normal position.

b) Introduce the bolt, in correct position, in the receiver, until the front end of the bolt carrier is situated approximately at the middle of the ejection port (figure 18).

c) Cock the hammer if it is not cocked, and attach the trigger housing group by replacing the front pin.

d) Replace the buttstock by introducing the main operating spring in the guide tube and lock the coupling box on the receiver, by putting in the attaching pins of the buttstock.

Assembly checking:

— Make sure that the weapon is perfectly assembled. For that, set the safety lever at "F"; draw the cocking handle to the rear and release it. The weapon should be perfectly locked.

— Press the trigger, you should hear the hammer striking.

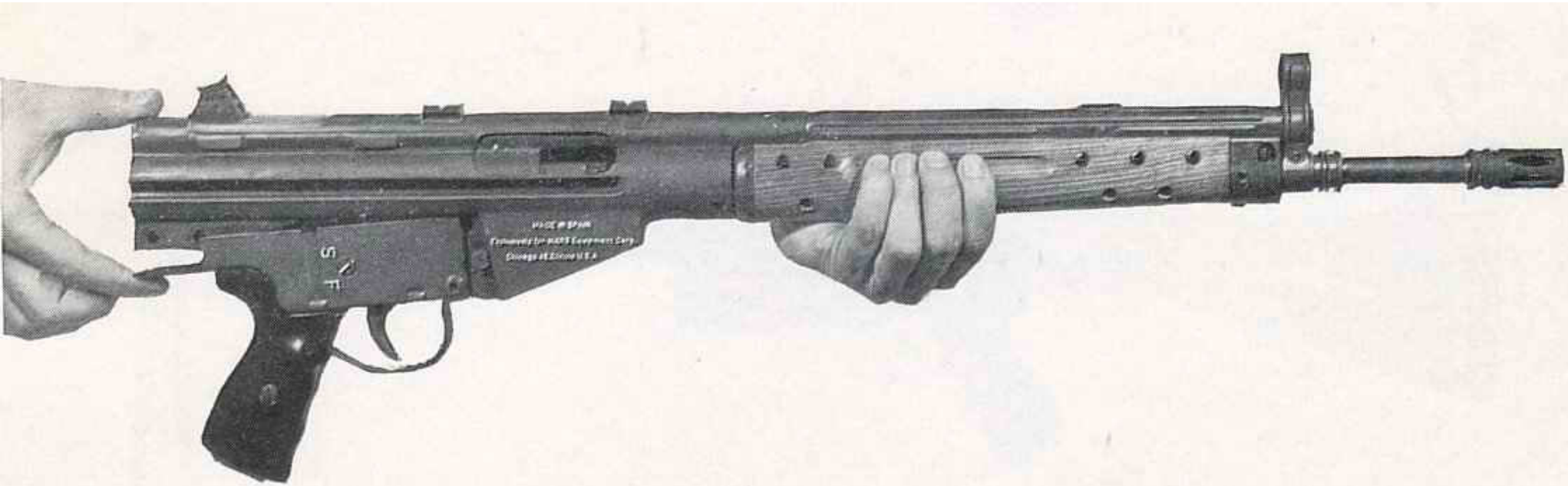


Fig. 18

IX.—AMMUNITION SPECIFICATIONS

Caliber: 7,62 mm. NATO - INTERNATIONAL MILITARY SPECIFICATIONS.

Bullet Diameter: .3070 MIN.—.3085 MAX.

Bullet Weight: 110-180 Grains.

Cartridge Case Length: 2.01 inches.

Propellant: Smokeless Rifle Powder, Progressive Burning, to produce chamber peak pressures not higher than 52,000 lbs. per square inch, nor lower than 35,000 lbs. per square inch.

SPECIAL NOTE

PERFORMANCE AND CHARACTERISTICS OF HANDLOADED OR RELOADED AMMUNITION, OR AMMUNITION LOADED WITH UNJACKETED BULLETS, MAY INTRODUCE UNFORESEEN VARIABLE FACTORS IN PHYSICAL EFFECTS OF FIRING, AND THEREFORE, THE MANUFACTURERS AND VENDORS WITHOLD, AND THE USER FORFEITS, ALL GUARANTEES OF ANY NATURE IN THE USE OF SUCH AMMUNITION.

THE RELOADING OF CARTRIDGE CASES ONCE USED IN THIS RIFLE FOR FURTHER USE IN ANY CETME OR SIMILAR RIFLE IS SPECIFICALLY WARNED AGAINST AS PRESENTING THE UTMOST HAZARD, IN VIEW OF THE ALTERATIONS MADE IN CARTRIDGE CASES BY FIRING IN CETME RIFLES. FURTHERMORE THE USE OF OVERANNEALED OR OVERWORKED CARTRIDGE CASES IS LIKEWISE WARNED AGAINST.

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Courtesy of
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